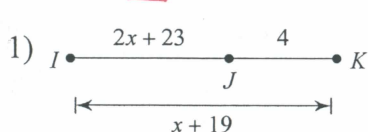


Practice EXAM

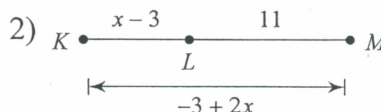
Date _____ Period _____

Solve for x.



- A) 7 B) -9
C) 11 D) -8

$$\begin{aligned} x+19 &= 2x+23+4 \\ x+19 &= 2x+27 \\ 19 &= x+27 \\ -8 &= x \end{aligned}$$

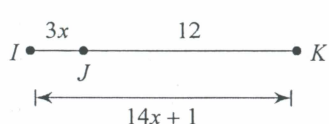


- A) 11 B) 9
C) 8 D) -5

$$\begin{aligned} (x-3)+11 &= -3+2x \\ x+8 &= -3+2x \\ 8 &= -3+x \\ 11 &= x \end{aligned}$$

Find the length indicated.

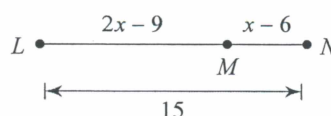
3) Find IJ



- A) 4 B) 5
C) 2 D) 3

$$\begin{aligned} (3x)+12 &= 14x+1 \\ 3x+12 &= 14x+1 \\ 12 &= 11x+1 \\ 11 &= 11x \\ 1 &= x \\ 12 &= 3x \\ 12 &= 3(1) \\ 12 &= 3 \end{aligned}$$

4) Find LM



- A) 9 B) 11
C) 17 D) 7

$$\begin{aligned} (2x-9)+(x-6) &= 15 \\ 3x-15 &= 15 \\ 3x &= 30 \\ x &= 10 \\ LM &= 2x-9 \\ &= 2(10)-9 \\ &= 20-9 \\ &= 11 \end{aligned}$$

Find the midpoint of the line segment with the given endpoints.

5) $(-1, 5), (-7, -5)$

- A) $(3, 5)$ B) $(-4, 0)$
C) $(-13, -15)$ D) $(2, -6)$

$$\left(\frac{-1+(-7)}{2}, \frac{5+(-5)}{2} \right) = \left(\frac{-8}{2}, \frac{0}{2} \right) = (-4, 0)$$

6) $(-5, 8), (0, 6)$

- A) $(5, 4)$ B) $\left(-2\frac{1}{2}, 7\right)$
C) $\left(1\frac{1}{2}, 3\right)$ D) $\left(-2\frac{1}{2}, 1\right)$

$$\begin{aligned} \left(\frac{-5+0}{2}, \frac{8+6}{2} \right) &= \left(\frac{-5}{2}, \frac{14}{2} \right) \\ &= \left(-2\frac{1}{2}, 7 \right) \end{aligned}$$

Find the distance between each pair of points.

7) $(-8, 7), (-8, 7)$

- A) $2\sqrt{113}$ B) 0
C) $2\sqrt{15}$ D) $\sqrt{30}$

— POINTS ARE THE SAME, THERE IS NO DISTANCE

$$\sqrt{(-8-(-8))^2 + (7-7)^2} = \sqrt{0+0} = 0$$

8) $(6, 2), (-6, 7)$

- A) 9 B) $\sqrt{17}$
C) 13 D) $2\sqrt{5}$

$$\begin{aligned} &= \sqrt{(-6-6)^2 + (7-2)^2} \\ &= \sqrt{(-12)^2 + (5)^2} \\ &= \sqrt{144+25} = \sqrt{169} \\ &= 13 \end{aligned}$$

Find the midpoint of the line segment with the given endpoints.

9) $(8, 7), (-1, -8)$

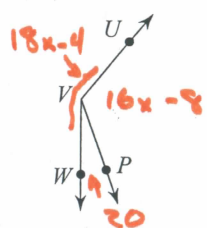
$$\left(\frac{8+(-1)}{2}, \frac{7+(-8)}{2} \right) = \left(\frac{7}{2}, -\frac{1}{2} \right) = \left(3\frac{1}{2}, -\frac{1}{2} \right)$$

10) $(-9, -4), (-8, 2)$

$$\left(\frac{-9+(-8)}{2}, \frac{-4+2}{2} \right) = \left(\frac{-17}{2}, -\frac{2}{2} \right) = \left(-8\frac{1}{2}, -1 \right)$$

ANSWER KEY

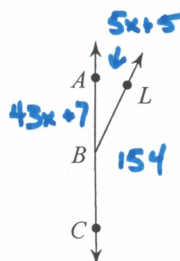
- 11) $m\angle UVW = 18x - 4$, $m\angle PVW = 20^\circ$,
and $m\angle UVP = 16x - 8$. Find x .



$$\begin{aligned}(18x-4) + 20 &= 16x-8 \\ 16x+12 &= 16x-8 \\ 12 &= 2x-4 \\ 16 &= 2x \\ 8 &= x\end{aligned}$$

- A) -3 B) -6
C) 8 D) 2

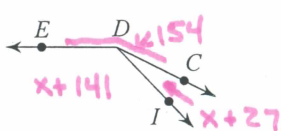
- 12) $m\angle LBC = 154^\circ$, $m\angle ABC = 43x + 7$,
and $m\angle ABL = 5x + 5$. Find x .



$$\begin{aligned}(5x+5) + 154 &= 43x+7 \\ 5x+159 &= 43x+7 \\ 154 &= 38x+7 \\ 152 &= 38x \\ 4 &= x\end{aligned}$$

- A) -1 B) 4
C) 10 D) 2

- 13) $m\angle CDI = x + 27$, $m\angle IDE = x + 141$,
and $m\angle CDE = 154^\circ$. Find $m\angle IDE$.

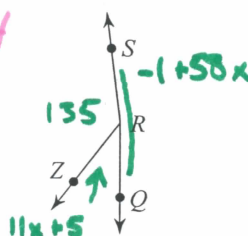


$$\begin{aligned}(x+141) + (x+27) &= 154 \\ 2x+168 &= 154 \\ 2x &= -14 \\ x &= -7\end{aligned}$$

- A) 84° B) -7°
C) 95° D) 134°

$$\begin{aligned}\angle IDE &= x+141 \\ &= -7+141 \\ &= 134\end{aligned}$$

- 14) $m\angle ZRS = 135^\circ$, $m\angle QRS = -1 + 58x$,
and $m\angle QRZ = 11x + 5$. Find $m\angle QRS$.



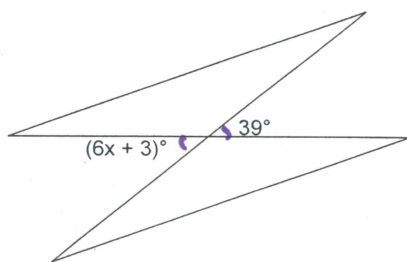
$$\begin{aligned}(11x+5) + 135 &= -1+58x \\ 11x+140 &= -1+58x \\ 140 &= -1+47x \\ 141 &= 47x \\ 3 &= x\end{aligned}$$

- A) 147° B) -1°
C) 150° D) 173°

$$\begin{aligned}\angle QRS &= -1+58x \\ &= -1+58(3) \\ &= -1+174 \\ &= 173\end{aligned}$$

Find the value of x.

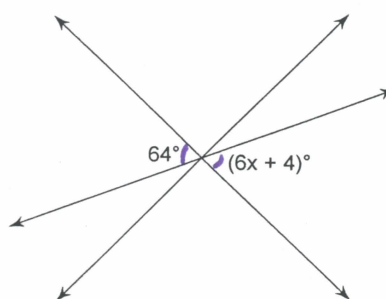
15)



- A) -1 B) 4
C) 5 D) 6

$$\begin{aligned}6x+3 &= 39 \\ 6x &= 36 \\ x &= 6\end{aligned}$$

16)

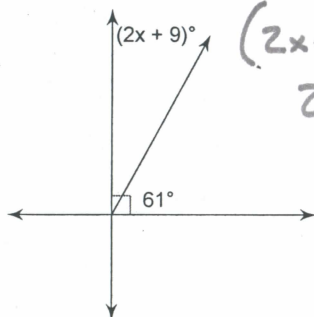


- A) 8 B) 2
C) 10 D) -2

$$\begin{aligned}64 &= 6x+4 \\ 60 &= 6x \\ 10 &= x\end{aligned}$$

ANSWER KEY

17)



$$\begin{aligned}(2x + 9) + 61 &= 90 \\ 2x + 70 &= 90 \\ 2x &= 20 \\ x &= 10\end{aligned}$$

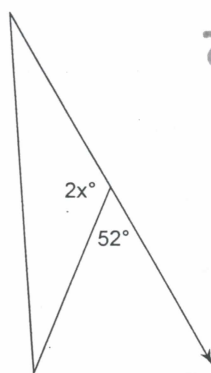
A) 27

B) 22

C) 10

D) 16

18)



$$\begin{aligned}2x + 52 &= 180 \\ 2x &= 128 \\ x &= 64\end{aligned}$$

A) 65

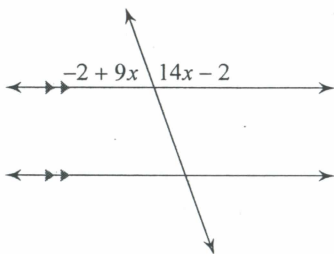
B) 64

C) 58

D) 60

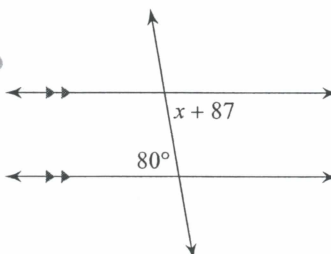
Solve for x.

19)



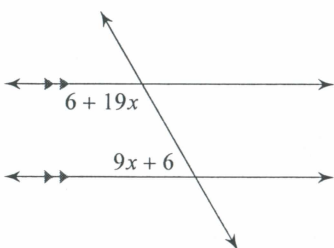
$$\begin{aligned}(-2 + 9x) + (14x - 2) &= 180 \\ 23x - 4 &= 180 \\ 23x &= 184 \\ x &= 8\end{aligned}$$

20)



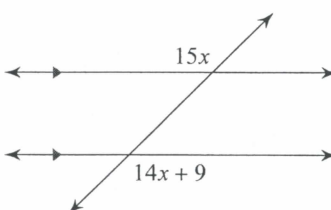
$$\begin{aligned}x + 87 &= 80 \\ x &= -7\end{aligned}$$

21)



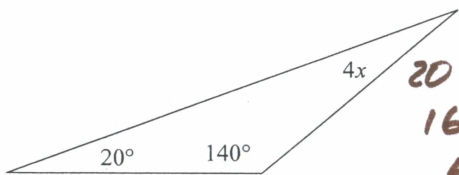
$$\begin{aligned}(6 + 19x) + (9x + 6) &= 180 \\ 28x + 12 &= 180 \\ 28x &= 168 \\ x &= 6\end{aligned}$$

22)



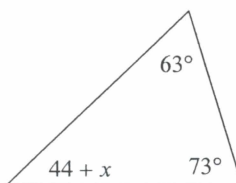
$$\begin{aligned}15x &= 14x + 9 \\ x &= 9\end{aligned}$$

23)



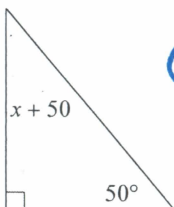
$$\begin{aligned}20 + 140 + 4x &= 180 \\ 160 + 4x &= 180 \\ 4x &= 20 \\ x &= 5\end{aligned}$$

24)



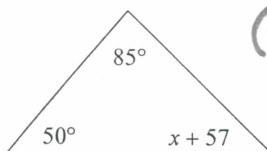
$$\begin{aligned}(44 + x) + 63 + 73 &= 180 \\ x + 180 &= 180 \\ x &= 0\end{aligned}$$

25)



$$\begin{aligned}(x + 50) + 50 + 90 &= 180 \\ x + 190 &= 180 \\ x &= -10\end{aligned}$$

26)

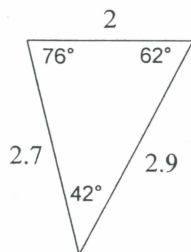


$$\begin{aligned}(x + 57) + 50 + 85 &= 180 \\ x + 192 &= 180 \\ x &= -12\end{aligned}$$

ANSWER KEY

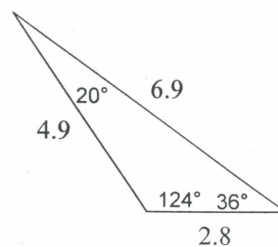
Classify each triangle by its angles and sides.

27)



- A) right isosceles
- B) obtuse isosceles
- C) acute obtuse
- D) acute scalene**

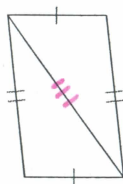
28)



- A) acute scalene
- B) obtuse scalene**
- C) acute isosceles
- D) acute right

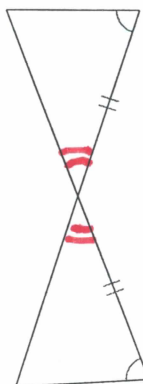
State if the two triangles are congruent. If they are, state how you know.

29)



YES
SSS

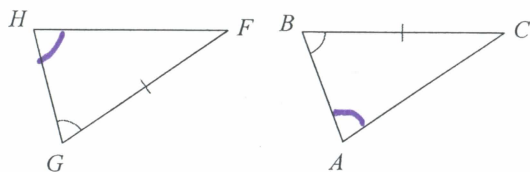
30)



YES
~~SSS~~
ASA

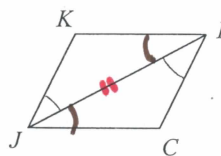
State what additional information is required in order to know that the triangles are congruent for the reason given.

31) AAS



$\angle H \cong \angle A$

32) ASA



$\angle IJC \cong \angle JIK$